

REMARKS

Claims 1-14 are pending in this application with claims 1, 6 and 12 being independent claims. No claims are amended, added or canceled in this response. The application as presented is believed to be in condition for allowance.

Rejections Under 35 U.S.C. §103

Claims 1-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Boord (U.S. Patent No. 6,647,209) in view of Castracane (U.S. Patent No. 5,999,319). Applicant respectfully traverses this rejection.

With regard to claim 1, the Examiner asserts that Boord discloses “a reflective optical element (reference numeral 27 in Figure 1) having a plurality of grating elements forming a plurality of pixels, each pixel configurable to direct a corresponding one of the plurality of optical carriers along a main pathway (inherent function of the grating taught by Boord); an optical source located off the main pathway (reference numeral 20 in Figure 1), positioned to direct an optical carrier to be added onto one of the plurality of pixels of grating elements, the one of the plurality of pixels configurable to diffract at least a portion of the optical carrier to be added into the main pathway.” Applicant respectfully disagrees.

Referring to Boord’s discussion of Figure 1 in which Boord is describing a demultiplexer device, Boord discloses that “several wavelengths...are transmitted to the device 15 by a single optical fiber 20 [and that] the light exiting the optical fiber 20 is collected and collimated by lens assembly 21.” Boord does not make any mention whatsoever of the optical fiber 20 being “located off the main pathway.” Rather, to the contrary, although Boord does not specifically call out a “main pathway,” it is reasonable to assume that the optical fiber 20 is in and not off any main pathway because the optical signals are specifically being directed from (in the case of a demultiplexer) and to (in the case of a multiplexer) the optical fiber 20. There is absolutely no discussion or suggestion present in Boord (whether related to discussion of Figure 1 or not) of any optical source being located “off the main pathway” and “positioned to direct an optical carrier to be added onto one of the plurality of pixels of grating elements,” as is recited in Applicant’s claim 1. Boord does not discuss adding an optical carrier to the main pathway from

an optical source located off the main pathway. Rather, Boord is directed to a particular type of demultiplexer (and multiplexer) device that receives an optical signal from the optical fiber 20 and processes it (or directs a processed optical signal to the optical fiber in the case of the multiplexer). Thus, Boord does not disclose or suggest several features recited in Applicant's independent claim 1.

The Examiner acknowledges that Boord does not disclose "a controller coupled to the reflective diffracting optical element to configure the plurality of pixels." However, the Examiner asserts that Castracane discloses that "these types of controller gratings are well known in the art" and that it would have been obvious to "employ a diffraction grating such as that taught by Castracane in the device of Boord in order to allow the diffracted power among individual diffractions orders of wavelengths to be altered."

Applicant does not agree with the Examiner's characterization of Castracane, nor with the assertion that it would have been obvious to modify Boord in view of Castracane. In addition, Applicant does not acknowledge that the proposed combination of Boord and Castracane is proper. However, Castracane fails to disclose or suggest "an optical source located off the main pathway, positioned to direct an optical carrier to be added onto one of the plurality of pixels of grating elements, the one of the plurality of pixels configurable to diffract at least a portion of the optical carrier to be added into the main pathway," as is recited in Applicant's independent claim 1. Therefore, Castracane fails to cure the deficiencies of Boord. Accordingly, even if it were proper to combine Boord and Castracane as suggested in the Office Action, the combination fails to disclose or suggest all the limitations of Applicant's claim 1. Therefore, the art of record, whether taken alone or in combination, does not render Applicant's claim 1 unpatentable, and withdrawal of the rejection of claim 1 is respectfully requested.

Claims 2-5 depend from claim 1 and are therefore allowable for at least the same reasons as discussed for claim 1. Accordingly, withdrawal of the rejection of claims 2-5 is respectfully requested.

With regard to Applicant's independent claim 6, the Examiner asserts that the combination of references discloses "a reflective diffracting optical element controllable to diffract a first optical carrier along a main pathway...the plurality of gaps diffracting a portion of the first optical carrier at an angle to the main pathway...and a first detector positioned to receive

the portion of the first optical carrier.” Applicant respectfully disagrees. As discussed in regard to claim 1, Applicant does not agree that the proposed combination of Boord and Castracane is proper. However, even in combination, the references disclose a multiplexer/demultiplexer optical system that has only a main pathway. There is absolutely no discussion in the references of an optical processor such as claimed in Applicant’s claim 6 that includes elements configured to diffract “a portion of the first optical carrier at an angle to the main pathway” and a detector “positioned to receive the portion of the first optical carrier.” Rather, in the prior art of record, all the optical signals are diffracted along the main pathway because that is the only pathway disclosed. As discussed above, Boord does not even specify a “main pathway” because Boord contemplates only one optical pathway and thus has no need to distinguish between a “main pathway” and any other pathway. Therefore, the prior art of record does not disclose or suggest each and every limitation recited in Applicant’s independent claim 6 thus cannot render claim 6 unpatentable. Accordingly, withdrawal of the rejection of claim 6 is respectfully requested.

Claims 7-11 depend from claim 6 and are therefore allowable for at least the same reasons as discussed for claim 6. Accordingly, withdrawal of the rejection of claims 7-11 is respectfully requested.

Applicant’s independent claim 12 recites, in relevant part, “directing the optical carrier from a location off of the main pathway onto one of the plurality of pixels” and “configuring the one of the plurality of pixels to diffract at least a portion of the optical carrier into the main pathway.” As discussed above, neither Boord nor Castracane, whether taken alone or in combination, makes any mention of an optical carrier being directed from a location off the main pathway onto one of the plurality of pixels of a diffracting optical element. Further, the references of record do not disclose or suggest “configuring the one of the plurality of pixels to diffract at least a portion of the optical carrier into the main pathway” (emphasis added). Therefore, for at least these reasons, claim 12 is patentable over the art of record and withdrawal of the rejection of claim 12 is respectfully requested.


Claims 13 and 14 depend from claim 12 and are therefore allowable for at least the same reasons as discussed for claim 12. Accordingly, withdrawal of the rejection of claims 13 and 14 is respectfully requested.

CONCLUSION

In view of the foregoing remarks, reconsideration is respectfully requested. This application should be in condition for allowance; a notice to this effect is respectfully requested. If the Examiner believes, after this response, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50/2762.

Respectfully submitted,
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